REC'D
JAN 20 1947
AGRICULTURAL LIBRARY

The American FERTILIZER

A.W.C.

ALL FERTILIZER MATERIALS

AMMONIUM NITRATE

SULPHATE of AMMONIA

ORGANIC AMMONIATES

SULPHUR

Foreign and Domestic

VEGETABLE OIL MEALS AND FEEDSTUFFS

Exclusive Distributors Duval Texas Sulphur

ASHCRAFT-WILKINSON CO.

Home Office
ATLANTA, GEORGIA

Branches
NORFOLK, VA.
CHARLESTON, S. C.
JACKSON, MISS.
TAMPA, FLA.

Cable Address
ASHCRAFT

Subsidiaries
INTERSTATE MILLS, INC.
CAIRO, ILL.
INTERSTATE WAREHOUSE
MOUNDS, ILL.

IT'S IN THE BAG

JAITE HEAVY DUTY MULTI-WALL PAPER BAGS

Offers Dependable Protection for

YOUR FERTILIZERS

- THE RIGHT BAG - IS A JAITE HEAVY DUTY MULTI-WALL PAPER BAG

• •

Jaite Bags are made of Super-Quality "Multi-Wall" Kraft Paper including Moist-Proof Sheets when necessary. In sewn or Pasted Types.

The JAITE COMPANY

MANUFACTURERS OF PAPER AND PAPER BAGS

JAITE, OHIO.

SINCE 1905

Published every other Saturday. Annual subscription: in the United States, $3.00; Canada and Mexico, $4.00; other countries, $5.00. Entered as second-class matter, January 15 1910, at the Post Office at Philadelphia, Pa., under Act of March 3, 1879. Registered in United States Patent Office. Publication office, 1900 Chestnut St., Phila, 3 Pa.

Billion Dollar Valley of BONES . . .

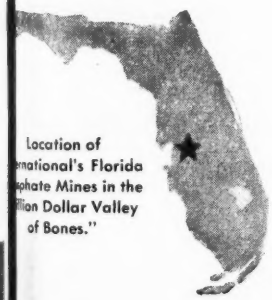
AGES before man first appeared on earth, irresistible forces of nature laid the foundation for one of Florida's greatest industries . . . the production of Phosphate Rock.

During early geologic ages, the remains of millions of fish and animals built up deposits of phosphatic materials which were later washed into what is now central Florida.

There they were laid down, long after the dinosaurs roamed the earth, to form almost inexhaustible deposits of pebble phosphate in this billion dollar valley of bone gravel.

These deposits have supplied many millions of tons of rich Phosphates which are essential to all life and which are extensively used in the plant foods required for the production of the nation's food crops.

International is fortunate that its Florida mines have many years' supply of the highest grade Phosphates. During its thirty-six years of leadership in this field, International has developed the most extensively mechanized phosphate operations in the industry and is now well prepared to supply a greatly increased tonnage of essential Phosphates for industry and agriculture in future years.



Location of ternational's Florida sphate Mines in the "lion Dollar Valley of Bones."

International Minerals & Chemical Corporation, General Offices: 20 North Wacker Drive, Chicago 6.

International MINERALS CHEMICALS

MINERALS AND CHEMICALS

ERNATIONAL MINERALS AND CHEMICALS serve you in many ways through industry and agriculture: POTASH and PHOSPHATE for industrial chemicals and fertilizers. HIGH-LYSIS PLANT FOODS for larger yields of quality crops. CHEMICALS: Potassium Chlorate, Silica Gel, Epsom Salt, Defluorinated Phosphate, Sodium Silico-Fluoride, Sulphuric Acid. NO PRODUCTS for the food and pharmaceutical industries: Mono Sodium Glutamate for finer tasting foods, Glutamic Acid, Glutamic Acid Hydrochloride, Betaine, Betaine Hydrochloride.

Blue print for repeat sales!
QUALITY PRODUCTS IN GOOD BAGS!
YOUR BRAND
YOUR HOME TOWN
Specification Code:
1 Bag Long Enough To Carry Best Product of its Kind in the World.
2 Bag Wide Enough
3 Seams Strong Enough to hold both Customers & Contents

NAME and FAME ARE ONE!

When your brand is printed proudly on a good burlap or cotton ba
it is read and remembered. *Textile Bags stay around longe*

Use only good bags and cash in on point-of-sale *and* point-of-u
advertising! MENTE MAKES MILLIONS OF FERTILIZER BAG
If it's bags you want to buy—write or phone MENTE!

Bags Made Better By

MENTE & CO., INC.

I. T. Rhea, President and General Manager

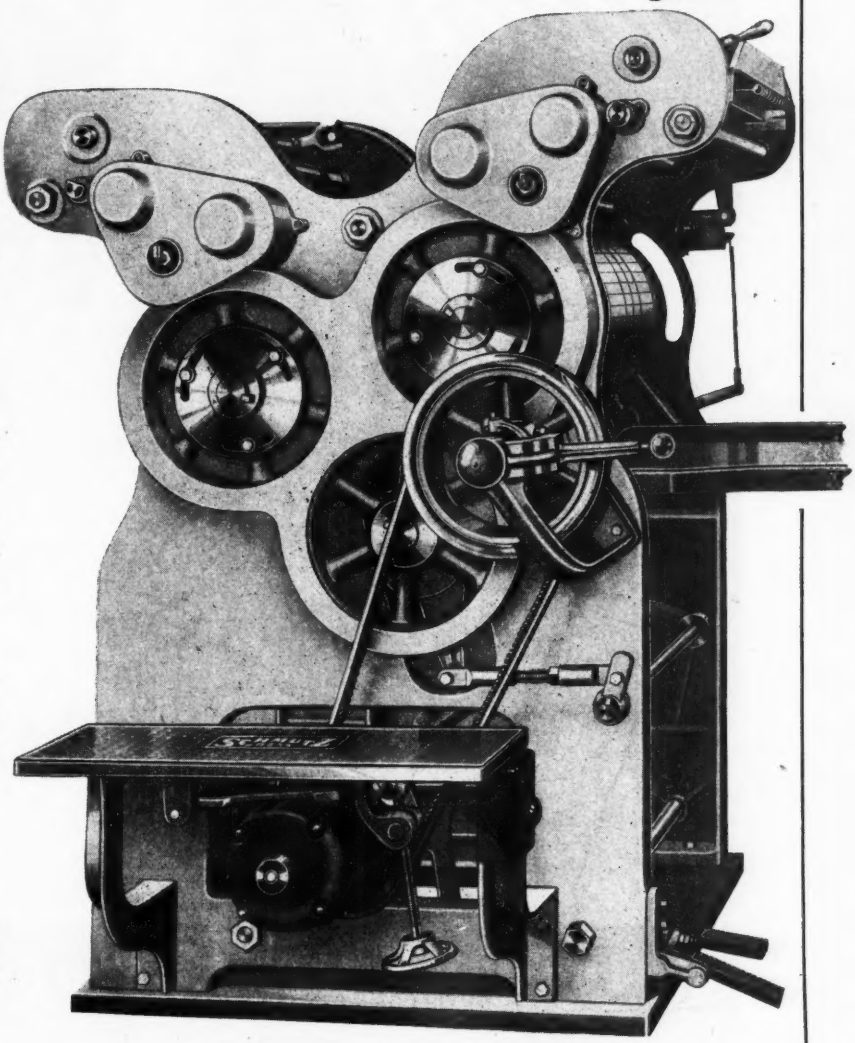
NEW ORLEANS HOUSTON SAVANNAH

print your FERTILIZER BAGS *more attractively*

This new 1945 Model Bag Printer will print any size or type of bag made of paper, burlap, cotton or paper-lined material. It is built in one, two and three colors.

The highest type of printing can be done with this machine at the lowest possible cost. It will also do an excellent job of printing on used bags.

We are in a position to make prompt delivery on printing plates also printing inks for the Fertilizer industry.



SCHMUTZ MFG. CO.
INCORPORATED
18th and Main Streets
Zone 3
Louisville, Ky.

MANUFACTURED IN TWO AND THREE COLORS

CABLE ADDRESS "SCHMUTZ" ◆ LONG DISTANCE PHONE JACKSON 5219

76 Years
MAKING GOOD BAGS
FOR THE PRODUCTS
OF THE NATION
Fulton Quality Bags
FULTON Quality BAGS
Fulton QUALITY Bags
Fulton Quality BAGS
Fulton QUALITY Bags
Fulton Bag & Cotton Mills
Manufacturers Since 1870
ATLANTA
NEW YORK
ST. LOUIS
NEW ORLEANS
DALLAS
DENVER
MINNEAPOLIS
KANSAS CITY, KANSAS

The American FERTILIZER

Vol. 105 DECEMBER 28, 1946 No. 13

Building the Chain of Good Will*

By C. T. PRINDEVILLE

Vice-President, Swift & Company

I PROPOSE to talk about Public Relations, and start by saying that I mean Good Public Relations. Obviously, there could be bad public relations, but what we are interested in is Good Public Relations — the kind of relations that makes friends.

When we speak about Good Public Relations, we are talking about Conduct. For an individual, Good Conduct means being honest, helpful, a good neighbor in the community. For a business like yours and mine, its good conduct is also determined by our honesty, our efficiency in serving the people with whom we do business, and performing our day-to-day service in the public interest.

In grandfather's time it was enough for a business to be conducted honestly. The public was not much interested in the social and economic implications of the local tannery or grist mill. This was because businesses were comparatively small and grandfather personally knew all his employes, his customers, and the people who provided the raw materials. It was not so easy for misunderstanding to arise. Also, many of our people had come recently enough from the Old World to appreciate and cherish individual freedom of action; moreover, they were mostly proprietors of small businesses and farms, who wanted to run their establishments according to their own ideas and were not too critical of how others similarly placed ran theirs.

Today, a large part of our population depends on wages and salaries in industry, education and government; always fearful that the cost of living will rise while their incomes remain stationary, they are suspicious of advertising appropriations, executive salaries, and profits. The fact that the economics of these things are poorly understood does not alter the importance of public opinion regarding them.

As we take time to explain any industry policy regarding, say, grades, filler or our pricing system, and to interpret that policy in terms of everybody's welfare, we come to understand it better ourselves.

Public relations should not be handled as a campaign such as Courtesy Week or Drive Carefully Month. It should be a permanent program like sales or production. If we forget about "the public" and think in terms of certain people we meet every day, our problem will be much clearer. The public is simply a collection of individuals. We can't reach the public but we can reach individuals: by planned personal contacts, which we can call "Building the Chain of Good Will."

Employees

Employes are the first link in the "chain of good will." The value of most employes depends on the understanding and interest which they have in the business in which they work. If a bookkeeper is only aware of the cold figures he deals with, his job, no matter how efficiently performed, is likely to become

*An address before the California Fertilizer Association, at Beverly Hills, California, October 16, 1946.

routine. He and other office employes come into direct contact with the trade; given an understanding of the basic principles of the business plus the encouragement to serve as sort of ambassador for his firm, he will grow in ability to accept responsibility and display initiative.

The field representative who is responsible for the sale of plant food is a most important man. He should be encouraged to indicate to dealers, farmers, county agents and state extension people he contacts that he's well informed about the economics of the industry; and if he can't answer questions, he should be urged to bring them to his manager, who can answer them in the field representative's name. The sales representative who shows knowledge of his business will increase his own prestige with the trade, and the manager who employs salesmen that really know the story of the plant food industry will have effective sales representation.

The superintendent is a man respected in the community for the position he holds at the factory. Facts about the industry should be discussed with him in detail, and he should be encouraged to pass those facts on to his working force and to people he meets on the outside.

He may feel there is little use in telling the industry story to unskilled workers; if so, he is wrong. There is no need to teach complicated economic ideas to these employes, but it is important to create the feeling that the company is honest and efficient, and does not take advantage of employes, suppliers, or customers. No matter how unimportant he may be, an employe still has a circle of acquaintances to whom he can speak in a favorable even though primitive way about the company, and this is bound to do some good. Each manager will know best how to impart information to his own employes.

There is an old saying, that "A man is known by the company he keeps." I'd like to turn that around: "A Company is known by the men it keeps." All of your men—and women—should be good-will salesmen for your company.

Business Contacts

The second link in the "chain of good will" is made up of people with whom we come in contact outside of our own factory, who are connected in any way with the selling or buying of plant food in our community. I urge you to make a list by name and address of all the dealers, commission men, key growers, and so on, in your area who should be contacted as a matter of good public relations, noting: how important they are in the area, when you made your last actual contact, where and how you can make another contact, and what interests draw you together to give you a common ground on which to discuss industry matters.

During the course of each year the manager of a plant food business should strive to make as many personal contacts as practicable with the persons on his list. These contacts may take place at social occasions, county fairs, agricultural demonstrations, etc., when he should casually manage to single out the key men in the business of buying and selling plant food who are present and seek some ground of friendly, mutual interest and agreement. Discussions of plant food operations should preferably be on a general economic plane; then, if there are specific questions, they will provide a good opportunity to get into correspondence on the subject later. After each contact, a letter can acknowledge the contact, refer to some point in the conversation, and answer any questions which arose. The average man enjoys receiving a personal letter from someone with whom he usually deals on a strictly business level.

Another basis for getting into correspondence with key people is to send news clippings on plant food or soil conservation subjects. For example, here is the kind of a letter that you might send to a business acquaintance:

> DEAR MR. DOE:
>
> Yesterday I was looking through a batch of newspaper articles about plant food and our industry, and came across the enclosed item which I thought might be of particular interest to you.
>
> As you will recall, we discussed this subject and formed pretty much the same conclusions as the writer of this article. I personally agree (or disagree) with him when he says so-and-so.
>
> There is no hurry about answering this, but I would like to get your angle as a plant food dealer on it
>
> Sincerely,

Naturally, a foundation of personal contact should be laid first and care taken that persons with whom the writer gets in correspondence are the kind who would definitely be pleased with this kind of relationship. It is also important that the correspondence not be controversial. Letters can set people straight on economic aspects of the industry.

Agricultural Contacts

The third link in the "chain of good will" is what you can do to link up your business with the agricultural life of the community, thereby establishing valuable contacts with agricultural leaders such as key men in fruit, livestock and other agricultural associations; vocational agricultural teachers; editors and writers for farm journals; extension service workers; officers of boys' and girls' clubs (such as 4H Clubs and Future Farmers of America); and leaders of rural women's groups.

What has been said about planned contacts, the use of letters to promote good will, answering questions with regard to our industry, etc., applies equally well to contacts with leaders in the community's agricultural life.

It is to these leaders that our projects should apply particularly and their cooperation needs to be obtained in connection with these activities.

We can promote a better understanding of our industry through speeches before agricultural associations and student bodies of agricultural colleges; sending industry literature to these leaders and groups, with suitable covering letters; encouraging visits to the factory by key individuals and by groups of students, during which some production man can explain the basic technology and economics of the business; sending to farm journal editors news about factory equipment and methods, statistics of the year's operations (not including, of course, figures which could be used to advantage by competitors), and human interest stories about employes or customers.

It is good public relations to help raise the standards of agriculture in the community. Besides yielding rich dividends in good will, activities of this sort produce tangible results in raising the purchasing power of growers who buy our plant foods. These projects can be carried on in cooperation with almost any of the groups mentioned, the details of course varying with local conditions and to be worked out with county agents, extension directors, vocational teachers, and other farm leaders. For example: arrange lectures and demonstrations by extension service men or vocational teachers; distribute educational pamphlets; conduct test plot experiments and demonstrations; cooperate in educational publicity campaigns of local chambers of commerce and civic associations; show films and slides before farm groups and in schools.

There are other projects specifically for young people in which you may be able to cooperate, such as: vegetable growing contests; essay contests for high school and college students; supplying literature, posters and equipment to local agricultural classes and vocational high schools—details to be worked out with club directors and school principals.

Press Contacts

The fourth link in the "chain of good will" is contact with the press. Good public relations is good conduct plus getting credit for it and to assure that we get due credit for our activities and policies there is no more important means than proper contacts with the press.

Particularly in smaller towns and rural communities the press is close to the lives and everyday interests of the people. There may be only one or two dailies or weeklies serving the community and it is natural that their local influence should be substantial. It is therefore of vital importance to a well-rounded program of good will that relations with the press be on a solid, friendly, understanding basis.

Press relations, like every other good will activity, should be a part, and grow out of, the regular operations of the business and not be considered a frill for use only on special occasions.

Looked at in this way, the attention you give to your local press will be of value to your business. Despite the growth of radio, newspapers are still the principal means of informing the public and helping to mold public opinion on events of the day.

You can be of service to the editors by keeping them informed on local events—about your business, your employes, and other items of interest. Become well acquainted with the editors and reporters so they will understand your business, know your problems, and then you will understand theirs. Meeting at events such as fairs, demonstrations, club meetings, and even golf matches provides opportunities to establish friendly and mutually helpful relations with members of the press.

During these conversations, a natural topic would be some of the factory problems and ideas concerning the industry that the editors should be informed about. Newspaper people understand such information is merely general background material and will not print it as coming from you without asking permission.

(Continued on page 30)

Advisory Committee Finds Improvement in Nitrogen Export Situation

At the invitation of the U. S. Department of Agriculture, its Fertilizer Industry Advisory Committee met with U. S. D. A. representatives and with staff members from other Government agencies including OWMR, State Department, and CPA to discuss the fertilizer supply situation for 1946–47.

The chief item of discussion was the domestic fertilizer nitrogen supply situation. Apparently there will be about 3 per cent less such nitrogen that in earlier Government estimates indicated. The total domestic fertilizer nitrogen supply now appears to be about 693,100 tons, slightly more than the month-ago estimate given by L. G. Porter of the U.S.D.A. at the time of the N.F.A. convention in Atlanta on November 13. These figures compare with an early July estimate of 715,908 tons for 1946–47. The presently indicated supply also compared with actual domestic distribution of 702,428 tons of nitrogen in 1945–46. The distribution of fertilizer nitrogen within the United States is not under allocation this year. It was brought out that distribution of fertilizer nitrogen this year is obviously taking on a slightly new pattern, furnishing less to some areas within the country than previously, and more to others.

Advisory Committee members emphasized the apparent discrepancies between domestic nitrogen deliveries and available supplies indicated by Government agencies. Government representatives indicated that the domestic situation may be somewhat easier after the first of the year, when it is expected that the reactivated Ordnance plants operated for the War Department will turn over their product for export and that commercial producers of ammonium nitrate will then be able to distribute five-sixths of their production within the continental United States. It was pointed out that there will not be enough nitrogen to satisfy the demand; that Army production will take care of army requirements; that exports from commercial production are a little less than 10 per cent of the total commercial supply; and that no area to which exports are being made will fare as well as the United States in terms of supply and demand relationship.

The following points appear to stand out among the results of the meeting: (1) a need for appropriate releases by the Department of Agriculture to inform fertilizer consumers on the supply picture and the factors causing a disturbed pattern of distribution; (2) a need for OWMR to follow through on its directive concerning high pressure tank cars for the handling of anhydrous ammonia for fertilizer production: (3) the desirability of the Department of Agriculture and other Government agencies working closely with industry to plan now, forehandedly, for nitrogen production to fit demands for 1947–48 and later years.

The phosphate and potash supply picture has not changed materially recently. Advisory Committee members at this meeting expressed their desire for prompt and complete decontrol of domestic fertilizer distribution if all fertilizer controls, including international controls, are abandoned; some appeared to favor domestic fertilizer decontrol even if international controls should be continued.

W. A. Minor, Assistant to the Secretary of Agriculture, was the Government presiding officer at the meeting. Present also were: J. E. Barnes (for H. M. Albright), George Cushman, J. F. Doetsch, Ralph B. Douglass, Franklin Farley, George W. Gage, John A. Miller, K. D. Morrison, Walter S. Rupp, John E. Sanford, C. D. Shallenberger, F. T. Techter Nelson T. White, and F. J. Woods, members of the Committee; Neil Bass, L. E. Britton, Ralph W. Cummings, J. H. Daughtridge, Cedric G. Gran, R. P. Koos, C. F. Larsen, Maurice H. Lockwood, D. S. Murph, A. F. Reed, John R. Riley, Jr., and C. A. Woodrum, by invitation; Roland Crumpler, H. W. Doerr, O. S. Fisher, Albert C. Howard, Frank W. Parker, L. G. Porter, C. R. F. Smith, L. B. Taylor, and W. F. Watkins, U.S.D.A.; C. C. Concannon, Department of Commerce; Henry M. Pauley, State Department; Frederic Arden, Frank Bennett, and Gwen J. Dirks, CPA, Robert C. Turner and Thelma Vettel, OWMR; O. E. Overseth, FAO, UN.

Credit Where Credit Is Due

Through an oversight, we failed to give the proper credit for the photographs shown on pages 8, 9, 11 and 13 of our November 30th issue. These views taken at the Atlanta convention were supplied by the publicity department o the National Fertilizer Association which did a very efficient job in supplying the press with all necessary material to give proper coverage of this important meeting.

St. Regis Adds to Staff

The St. Regis Paper Company, New York, announces the addition of Joseph R. Healey and William D. Peters to its sales promotion staff. Both men are veterans of World War II.

Under the supervision of Kenneth D. Lozier, vice-president of the St. Regis Sales Corporation, and William C. Varey, in charge of field representatives, they will join a "flying squad" covering the entire United States in presenting the essential advantages of multiwall paper bags to industrial users of agricultural and chemical commodities.

Mr. Healey entered the Armed Forces as a private and was relieved from active duty as a captain in the Air Forces. Mr. Peters entered the service as a aviation cadet and later served as a communications officer in the Army Airways Communications System.

Nitrogen Increases Rice Yields

Rice farmers in growing numbers are finding that fertilizer increases yield, J. O. Dockins, Extension soil specialist of the University of Arkansas College of Agriculture, declares.

In Arkansas county alone, County Agents E. W. Loudermilk and Jack Coleman report 45,000 acres, or approximately 50 per cent of the rice acreage in the county was fertilized. The average increase in yield was estimated at 10 bushels per acre.

Rice grown on old rice land will profitably respond to nitrogen fertilization provided the fertilizer is properly applied, Mr. Dockins said.

Experiments conducted by the University of Arkansas College of Agriculture have shown that rice yields can be increased 5 to 15 bushels per acre by the use of nitrogenous fertilizers. These experiments have shown that best results are usually obtained by applying the fertilizer as a top-dressing on rice on dry soil just before the first or second watering.

Cyanamid, ammonium nitrate, and nitrate of soda are the materials commonly used. Recommended rates of these materials are: cyanamid, 200 pounds per acre; ammonium nitrate, 125 pounds per acre; and nitrate of soda, 200 to 250 pounds per acre.

For early varieties, such as Zenith, the fertilizer should be applied on dry soil just before the first watering; for late varieties, such as Supreme Blue Rose, apply on dry soil just before the second watering.

Gran Added to Staff of Plant Food Council

Appointement of Cedric G. Gran, formerly head of the Agricultural Chemicals Section of OPA, as Assistant to the President of the American Plant Food Council, has been announced by Clifton A. Woodrum, president of the Council.

Mr. Gran served on the Washington staff of OPA from November, 1941, to November, 1946, administering price ceilings on fertilizers, fertilizer raw materials, agricultural limterials, insecticides and fungicides.

Cedric G. Gran

His previous experience included four years as managing director of Shenandoah Valley, Inc., a regional Chamber of Commerce at Staunton, Va.; seven years as advertising manager for the Virginia-Carolina Chemical Corp., at Richmond, Va., and four years as assistant to the president of Pin Money Brands, Inc., a Richmond food concern. He is a past president of the Staunton Rotary Club.

Gran was born at Mankato, Minnesota, and reared in Wisconsin and Indiana. He was graduated by De Pauw University at Greencastle, Ind., with the Class of 1936.

THE AMERICAN FERTILIZER
ESTABLISHED 1894
PUBLISHED EVERY OTHER SATURDAY BY
WARE BROS. COMPANY
1900 CHESTNUT ST., PHILADELPHIA 3, PA.

A Magazine international in scope and circulation devoted exclusively to the Commercial Fertilizer Industry and its Allied Industries

PIONEER JOURNAL OF THE FERTILIZER INDUSTRY

A. A. WARE, Editor
C. A. WHITTLE, Associate Editor
K. F. WARE Advertising Manager

E. A. HUNTER, Southern Advertising Manager
2246 E. Lake Road, N. E.,
Atlanta, Ga.

REPRESENTATIVE
WILLIAM G. CAMPBELL
123 W. Madison St., Chicago, Ill., Phone—Randolph 4780

ANNUAL SUBSCRIPTION RATES

U. S. and its possessions, also Cuba and Panama	$3.00
Canada and Mexico	4.00
Other Foreign Countries	5.00
Single Copy	.25
Back Numbers	.50

THE AMERICAN FERTILIZER is not necessarily in accord with opinions expressed in contributed articles that appear in its columns. Copyright, 1946, by Ware Bros. Company.

Vol. 105 DECEMBER 28, 1946 No. 13

Principal Articles in This Issue

BUILDING THE CHAIN OF GOOD WILL, *by C. T. Prindeville* 7
Advisory Committee Finds Improvement in Nitrogen Export Situation 10
Gran Added to Staff of American Plant Food Council 11
December Cotton Report 12
Fertilizer Demands Considerably in Excess of Supply 13
FERTILIZER MATERIALS MARKET:
New York 15
Philadelphia 15
Charleston 17
Chicago 17
Potash Deliveries Increase 19
Davison Adds New Officers 22
Fertilizer Abstracts 26

December Cotton Report

A United States cotton crop of 8,482,000 bales is estimated this year by the Crop Reporting Board of the Bureau of Agricultural Economics based upon information reported by ginners and farmers as of December 1. The indicated 1946 crop s only 5,000 bales less than the November 1 forecast, and 5.9 per cent less than last year's small crop of 9,015,000 bales. It is about one-third sma ler than the 10-year average, and only 537,000 bales more than the 1921 crop which was the smallest since 1895. The lint yield per acre, computed at 230.7 pounds, is ower than any year since 1936, and compares with 253.6 pounds harvested last year and the 10-year average of 243.8 pounds.

The acreage of cotton in cultivation on July 1, 1946 is now estimated at 18,179,000 acres. This is 617,000 acres or 3.5 per cent above the 1945 planted acreage but nearly 7½ million acres below the 10-year average. Unfavorable weather and severe weevil damage caused heavy abandonment of acreage in Mississippi and Louisiana, and above-average abandonment in Texas, Oklahoma, Arkansas and Alabama. The acreage remaining for harvest is now estimated at 17,639,000 acres compared with 17,059,000 acres for 1945.

The Bureau of the Census reports 7,365,914 bales of cotton ginned from the crop of 1946 prior to December 1, compared with 7,382,667 bales for 1945 and 10,272,672 bales for 1944.

PRODUCTION (GINNINGS) 500 lb. gross wt. bales

STATE	Average 1935–1944	1945 Crop	1946 Crop (Dec. 1 est.)
	Thous. bales	Thous. bales	Thous. bales
Missouri	365	180	305
Virginia	27	16	16
North Carolina	612	428	420
South Carolina	773	664	695
Georgia	956	669	555
Florida	22	8	5
Tennessee	514	466	510
Alabama	1,016	931	800
Mississippi	1,757	1,560	1,040
Arkansas	1,375	1,042	1,240
Louisiana	656	387	250
Oklahoma	596	285	260
Texas	3,137	1,794	1,650
New Mexico	112	106	145
Arizona	187	117	143
California	430	353	435
All Other	18	9	13
United States	12,553	9,015	8,482
Amer. Egypt	33.6	4.1	2.2

Cotton seed production from the 1946 crop, placed at 3,452,000 tons, is 6 per cent below that produced in 1945 and 34 per cent below the 10-year average. Reports from cotton ginners indicate 62.9 pounds of cotton seed produced this year for each 37.1 pounds of lint.

Fertilizer Demands Considerably in Excess of Supply

The U. S. Department of Agriculture issued on December 18th the following statement on the tight fertilizer supply situation in response to a request made by the Fertilizer Industry Advisory Committee which met here at the Department on December 10th:

Although the supply of fertilizer for American agriculture for the current fiscal year is near record levels, and is more than double the prewar consumption, the demand is considerably in excess of supply, especially with respect to nitrogenous materials.

The supply of nitrogen for American agriculture for the current fiscal year is expected to be almost as large as last year—nearly 700,000 tons—and the supply of solid forms of nitrogen will be equal to last year except for the loss in production of synthetic nitrate of soda, which is due to short supplies of soda ash for this purpose. There will be some regional variations in the usual pattern of distribution due to new plant capacity and the strong demand from new areas of fertilizer use.

Programmed exports for the year now are only 67,000 tons of nitrogen, reduced a month ago from 97,000 tons. Such exports for last year were 73,000 tons of nitrogen. The United States will still import three times as much nitrogen as it will export during the year. The maritime strike cut off imports of Chilean nitrate for serveral weeks, and currenly port strikes in Chile make imports impossible, but the Chilean nitrate import goal for the current fiscal year is expected to be met.

The U. S. supply of nitrogen, which includes domestic production and imports, during the first four months of the current fiscal year—July, August, September, and October—was 250,700 tons of nitrogen compared with 229,000 tons in the same four months of the past fiscal year. During the first four months of this year, 32,200 tons of nitrogen were exported. This includes the nitrogen in the form of ammonium nitrate loaned to the Army for shipment to U. S. occucpied zones for food production essential to orderly government and prevention of disease and unrest.

The table given below, based on data presented by the Office of Temporary Controls (CPA), compares the supplies for 1945–46 with the 1946–47 program and supplies available during July, August, September, and October in 1945 and 1946.

Army borrowing of 110,000 tons of ammonium nitrate during August, September, October and November will be paid back during the first five months of calendar year 1947, according to the program.

After allowing for export commitments which were postponed this fall and must be fulfilled from the domestic supply during the period December 1946 through June 1947, 310,000 tons of ammonium nitrate will be available during the 7 months for distribution in the United States and Puerto Rico. This is the same tonnage which was available during the corresponding period of last season.

(In tons of nitrogen)

		1945–46 Year	1946–47 Year	Four Month Period July Aug. Sept. Oct. 1945	1946
Ammonium Sulphate	U. S. Production	149,200	143,500	55,300	61,200
	Imports	25,800	23,500	9,200	5,800
Ammonium Nitrate	U. S. Production	137,700	159,500	28,600	53,600
	Imports	44,200	38,000	12,500	16,300
Other N Material	U. S. Production	62,500	26,400	26,000	10,600
	Imports	42,200	42,300	13,000	18,600
Nitrate of Soda	Chile	98,800	96,800	24,600	10,900
Solutions	U. S. Production	185,000	200,000	50,100	63,600
Organics	U. S. Production	30,000	30,000	10,000	10,000
	Totals	775,400	760,000	229,300	250,700
Exports		73,000	67,000	17,500	32,200
Net for U. S. and Possessions		702,400	693,000	211,800	218,500

Army borrowings of 110,000 tons of ammonium nitrate during August, September, October and November will be paid back during the first five months of calendar year 1947, according to the program.

American Potash Announces Staff Changes

It has been announced by the American Potash and Chemical Corporation that effective January 1, 1947 C. L. Straughan will become Manager of thier Atlanta office. In that capacity he will be in charge of potash and boron products sales for the company in the South. Mr. Straughan has been with the American Potash and Chemical Corporation in a sales capacity for the past 14 years.

C. L. Straughan W. A. Webster

The Company has also announced that W. A. Webster is again permanently located in their Chicago office. As of October 1st Mr. Webster became Manager of Midwestern Sales for the company and in that capacity will be in charge of the sales of potash and boron products in that area.

After joining American Potash and Chemical Corporation in 1941 Mr. Webster, for a time, was resident manager of the company's Chicago office. However, during the past year he has worked principally from the main sales office in New York City.

Bigger Ohio Corn Yields Pay For Fertilizer

Tests made in 1946 by the agronomy department, Ohio State University, indicate an Ohio farmer can expect from 15 to 20 more bushels of corn per acre when a row application of fertilizer is supplemented by plowing down enough other fertilizer to supply 50 to 80 more pounds of nitrogen per acre.

E. P. Reed, extension agronomist, explains the 1946 field trials were run in 23 counties and the fields where the corn was grown contained 17 different soil types. In general, the practice of plowing down additional fertilizer for corn will pay best in Ohio on good soils with 12,000 to 14,000 corn plants per acre.

In these field tests, the row application was an average of 345 pounds per acre of 3–12–12. Three methods were used to put the extra nitrogen in the corn fields. Comparisons were made between plowing down 600 pounds per acre of 8–8–8, 750 pounds of 10–6–6, or 400 pounds of 20–0–0 in adition to the fertilizer applied in the row.

Mr. Reed says that yield increases in the 1946 tests varied from zero to over 40 bushels per acre. The agronomists report that increased corn yields in 1946 paid for the plowed down fertilizer in 39 per cent of the tests with 8–8–8, in 41 per cent of the tests with 10–6–6, and in 62 per cent of the tests w th 20–0–0. The corn was priced at $1.15 a bushel to figure the money return.

The men conducting the tests point out that the corn crop gets only 40 per cent of the available plant food from the plowed down fertilizer and the other 60 per cent of its value is available to the crops which follow the corn in the succeeding three years. This residual effect from the fertilizer is a plus value above the immediate profit from bigger corn yields.

BRADLEY & BAKER

FERTILIZER MATERIALS - FEEDSTUFFS

AGENTS - IMPORTERS - BROKERS

155 E. 44th Street
NEW YORK

BRANCHES

Clinton St. & Danville Ave. Baltimore, Md.
505 Royster Building Norfolk, Va.
Barnett Bank Building Jacksonville, Fla.
504 Merchants Exchange Bldg., St. Louis, Mo.

FERTILIZER MATERIALS MARKET

NEW YORK

New Business Scarce During Holiday Season. Shipments on Contracts at Top Levels but Still Below Demand. Hope for More Materials Increases. Rumor of Imports of German Potash Proves Unfounded

Exclusive Correspondence to "The American Fertilizer"

Due to the imminent hoiday week, activity in the fertilizer industry is confined mainly to shipments being made against current contracts. Practically no new business is being consummated at this time and the few offerings that have appeared in the market have found no buyers. The settlement of the coal strike is lending an optimistic tone to the general situation, but it is too early to determine what permanent effect this strike will eventually have on supplies of nitrogen for this fertilizer year.

Sulphate of Ammonia

Shipments are being resumed, but it will be some time yet before supplies will be back to normal volume. There remains a large amount of unfilled demand, particularly among the smaller fertilizer manufacturers.

Nitrate of Soda

Stocks in this area remain low due to constant demand from mixers, but a sizable shipment from Chile is expected in the near future. So far the advanced price on soda ash has not yet been reflected in this market.

Organic Materials

Demand continues heavy with offerings extremely limited. A few sales of dried blood have been reported at $9 ($10.94 per unit N), but little interest is being shown by fertilizer manufacturers on this basis. There have been a number of offerings from South America in the market recently on such items as bone meal, fish meal, tankage, etc., but prices quoted have in every case been considerably above domestic levels.

Superphosphate

Nothing new to report in this market, with acidulators continuing to produce at maximum capacity and material moving to mixers as fast as produced. Demand for this material from Central and South American countries has eased considerably.

Potash

Movement from producing points to fertilizer plants has been slowed up in some areas because of the difficulty in obtaining boxcars regularly. However, shipping schedules have been maintained in most cases. There have been various rumors to the effect that German potash would enter this market after the first of the year, but investigation has proven that there is no possibility of importations from that source as all supplies of potash from the German mines are being consumed in Europe.

PHILADELPHIA

Material Supply Still Below Demand in All Materials. Organics Prices Still Above Fertilizer Levels

Exclusive Correspondence to "The American Fertilizer"

PHILADELPHIA, December 23, 1946.

The general situation involving fertilizers and raw materials is still quite unsettled, and it seems certain that mixed fertilizers will cost the grower more money next year. There is an active demand for all materials.

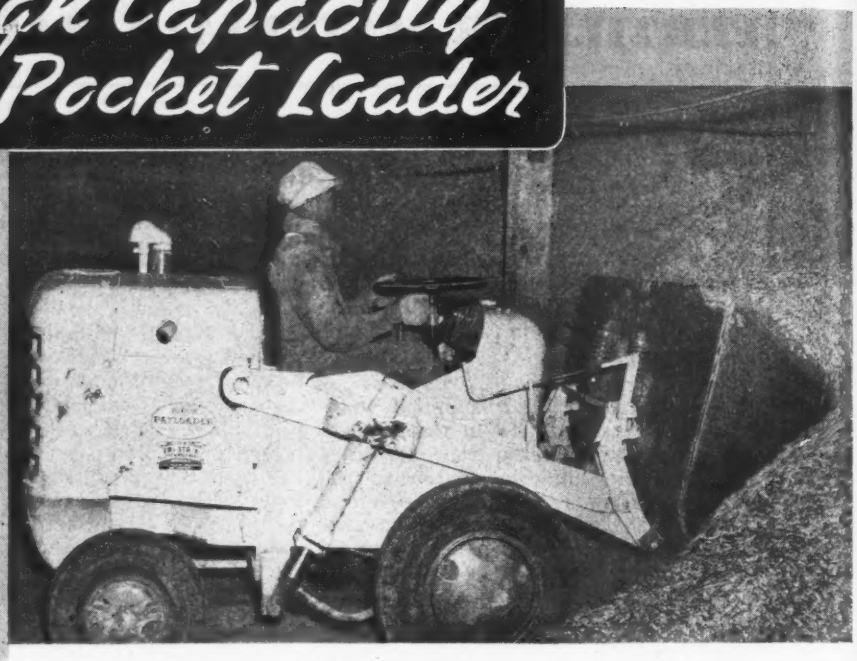
Sulphate of Ammonia.—While shipments continue on contracts, the demand is heavier than the supply and many mixers continue to be short of their requirements. And, of course, the coal strike did not help this situation.

Nitrate of Soda.—Demand continues against limited supply, with domestic production still hampered through scarcity of raw material.

Castor Pomace.—Some sales have been reported at higher than previous prices, but the demand is much greater than can be supplied at this time.

Blood, Tankage, Bone.—While the feeding demand has eased off, there has been no drastic cut in prices. Blood and tankage have sold at $9.00 to $9.50 per unit of ammonia ($10.94 to $11.55 per unit N), although there were some offerings reported at $8.50 ($10.33 per unit N). Bone meal is still in demand by

A High Capacity Vest Pocket Loader



The Hough Model "HA" Payloader completely fulfills the need of the fertilizer industry for a compact, readily maneuverable loader for handling bulk materials economically. The "HA" Payloader is the result of many years of development work and exhaustive operating tests. It has already proved itself in nearly a hundred fertilizer plants.

Maneuverability reaches a new high with this unit. It loads and operates with ease and thoroughness in and out of a box car, the overall width is only 49", the wheel base 48½" and the turning radius only 6'6". One man with the "HA" Payloader loads bulk material, carries it 100 feet and dumps it at a rate of 25 to 50 tons per hour. It will do the work of 8 to 10 men.

The "HA" Payloader is a rugged powerful tractor unit—not an attachment for a tractor. Power is furnished by a heavy duty 4 cylinder 29 H.P. engine. Two speeds forward and two reverse provide ample flexibility and speed of movement. The bucket is hydraulically actuated by twin cylinders and has the exclusive tip-back feature which prevents spillage.

The Model "HA" Payloader is the material handling unit you have been waiting for. There are over 3500 Hough Loaders in service.

Write for full information.
We have a Distributor near you.

THE FRANK G. HOUGH CO.
Libertyville, Illinois . "Since 1920"

HOUGH Payloader SHOVELS

the feeding trade, with very limited supply. Steamed bone meal has been quoted at $80.00, with raw bone meal at $85.00.

Fish Scrap.—No offerings reported.

Phosphate Rock.—Demand continues beyond the capacity of the mines to supply, and acidulators accordingly continue short of their requirements.

Superphosphate.—The market continues tight with demand in excess of supply.

Potash.—There is very strong demand for all grades, and though domestic production is at full capacity, the supply is still insufficient to satisfy requirements.

CHARLESTON

Freight Increase Will Add to Fertilizer Cost. Some Organic Prices Drop. Fires in Several Superphosphate Plants

Exclusive Correspondence to "The American Fertilizer"

CHARLESTON, DECEMBER 23, 1946.

The increased freight rates recently approved by the ICC will affect most fertilizer producers by about 20 per cent increase in freight costs on raw materials. Demand from consumers of mixed fertilizers remain strong and unusually heavy for this time of the year.

Organics.—Prices of several organics have fallen off but sewage sludge is reported higher by about $1.20 unit-ton. Dried blood, ground, was quoted recently at around $9.00 per unit ammonia ($10.94 per unit N) in bulk, f.o.b. Chicago. The South American market is quiet. Fertilizer tankage from the packing-houses is quoted around $8.50 per unit ammonia ($10.33 per unit N) and 10 cents per unit B.P.L., f.o.b. Chicago. European organics remain practically unobtainable.

Castor Pomace.—Market is rather quiet as good quantities have been sold recently on the new flat ton basis. Price is around $35.00 to $37.00 per ton, f.o.b. production point.

Hoof Meal.—Nothing much offered now but price fell from $9.50 unit ton ($11.55 per unit N) to $8.50 ($10.33 per unit N) for fertilizer use.

Nitrate of Soda.—Demand is very strong and the strike in Chile, which will hold up shipments, has buyers worried about deliveries of imported nitrate of soda. Domestic nitrate of soda production is still hampered by shortage of basic raw material.

Sulphate of Ammonia.—Demand remains far ahead of supply and the coal strike is reported to have caused a considerable loss in production.

Cynamide.—The price has advanced on this material by 22½ cents per unit per unit ton, effective December 9th.

Ammonium Nitrate.—Demand is greater than supply as much as been exported and the quantity for domestic use is insufficient to meet all calls.

Potash.—Demand is in excess of supply. Car shortage is delaying shipments somewhat.

Superphosphate.—Fires at several producers' plants in recent months have cut the total expected output. The coal strike which curtailed shipments of rock and sulphuric acid also hampered production. Demand remains strong and supply insufficient to meet it. October output was placed at 492,555 tons of 18 per cent superphosphate.

Phosphate Rock—Domestic and export demand remains active and insufficient to meet the call. Car shortage continues to cut deliveries to domestic consumers by about 20 per cent.

CHICAGO

Nitrogen Tankage Selling at Top Prices. Some Feed Material Prices Reduced

Exclusive Correspondence to "The American Fertilizer"

CHICAGO, December 23, 1946.

There was little resistance on account of price on a small tonnage of nitrogenous tankage recently offered for early spring delivery.

Manufacturers' Sales Agents for **DOMESTIC**

Sulphate of Ammonia

Ammonia Liquor :: Anhydrous Ammonia

HYDROCARBON PRODUCTS CO., INC.

500 Fifth Avenue, New York

CASE HISTORY FACTS AND FIGURES PROVE ST. REGIS PACKAGING SYSTEMS BOOST PRODUCTION – CUT PACKAGING COSTS

FOOD — OUTPUT RISES 100%... COSTS DROP 77%

FERTILIZER — OUTPUT INCREASES 38%... COSTS DROP 26%

FEED — OUTPUT INCREASES 100%... COSTS DROP 55%

CHEMICALS — OUTPUT JUMPS 180%... COSTS DROP 24%

These results, reported in "Case History" studies in four major industries, demonstrate the efficiency and economy of St. Regis Packaging Systems (packers and multiwall paper valve bags). This modern packaging method is used for a wide range of products, with each system designed to meet specific product characteristics and plant layouts.

Manufacturers prefer St. Regis Packaging Systems because they cut labor costs and container costs . . . and increase packaging output at the same time. In addition, they have found that easy-to-handle paper bags have won wide acceptance with their customers.

Nearly 3,000 St. Regis valve bag filling machines are in operation throughout American industries. They are made in a variety of capacities and sizes. Filling speeds range from three to as high as twenty-four 100-lb. bags per minute – with only one operator requi

A St. Regis packaging engineer will be glad to dis your packaging problems with you. For additional in mation call or write your nearest St. Regis office.

MULTIWALL

ST. REGIS SALES CORPORATIO

(Sales Subsidiary of St. Regis Paper Compa

NEW YORK 17: 230 Park Ave. **CHICAGO 1: 230 No. Michigan A**

BALTIMORE 2: 2601 O'Sullivan Bldg. **SAN FRANCISCO 4: 1 Montgom**

Mail coupon for Free Folder describing each case in detail

Allentown Birmingham Boston Cleveland Dallas De
Detroit Franklin, Va. Los Angeles Nazareth, Pa. New Orl
No. Kansas City, Mo. Ocala, Fla. Oswego, N. Y. Seattle To

IN CANADA: St. Regis Paper Co. (Can.) Ltd., Montreal, Vancou

Read the facts and *judge for yourself*

Write for free copies of any case history, or for a complete set. They describe what was wrong with the "old system" and how a St. Regis Packaging System brought outstanding economies.

Case History	Product Packed	Increase in Packaging Output (Hourly)	Total Savings in Packaging Costs
No. 1	Flour Mix	100%	77%
No. 2	Fertilizer	20%	47%
No. 3	Poultry Grit	100%	55%
No. 4	Salt	18%	45%
No. 5	Cocoa	62%	60%
No. 6	Barley	—*	62%
No. 7	Dog Food	100%	34%
No. 8	Fuller's Earth	180%	24%
No. 9	Talc	100%	35%
No. 10	Fertilizer	38%	26%

*Previous figures not available

Without obligation please send me folders describing case histories indicated:

No. 1___ No. 2___ No. 3___ No. 4___ No. 5___
No. 6___ No. 7___ No. 8___ No. 9___ No. 10___

NAME_____

COMPANY_____

ADDRESS_____

The slight resistance seemingly came from points in the interior. On the other hand, coastal manufacturers were exceedingly glad to accept all offerings and made no objections to the price.

There was some weakness displayed in the feeding market. A few of the large producers reduced prices, finding buyers generally out of the market, to wait developments.

Obituaries

J. Lea Fearing, Jr.

J. Lea Fearing, Jr., manager of the Allentown, Pa., office of the St. Regis Sales Corporation, subsidiary of the St. Regis Paper Company, died in White Plains, N. Y., on December 17, after a short illness. He was 45 years old.

Mr. Fearing was a member of a family which has been prominnent in the paper industry in the United States for many years. His father, the late Joseph Lea Fearing, was a Vice-President of the International Paper Company.

Following his graduation from Harvard, Mr. Fearing, Jr., became associated with the International Paper Company. Later he joined St. Regis Paper first covering various territories in the Chicago area. Subsequently he was made manager of the St. Regis office at Allentown, Pa., where he had a wide group of friends in the cement companies in the Lehigh Valley.

No announcement has yet been made regarding a successor to Mr. Fearing as manager of the Allentown office.

Potash Deliveries Increase

The five major American potash producing companies delivered in the United States, Canada, Cuba, Hawaii, and Puerto Rico during the second quarter of 1946 a total of 387,879 tons of potash salts containing an equivalent of 217,818 tons of K_2O, the American Potash Institute has announced. This represents an increase of 0.1 per cent in salts and 3.6 per cent in K_2O over the tonnage delivered during the corresponding period in 1945. Deliveries for agricultural purposes amounted to 357,839 tons of salts equivalent to 199,067 tons of K_2O, consisting of 176,369 tons as muriate, 4,260 tons as manure salts, and 18,438 tons as sulphate of potash and sulphate of potash-magnesia. Deliveries for

chemical use amounted to 30,040 tons of salts, equivalent to 18,751 tons of K_2O.

For the first six months of 1946 deliveries to United States, Canada, Cuba, Puerto Rico, and Hawaii amounted to 844,335 tons of salts containing an equivalent of 472,478 tons K_2O. This represents an increase of 2.8 per cent in salts and 7.0 per cent in K_2O over the same period in 1945. Deliveries of potash for agricultural use totaled 788,218 tons of salts, with an equivalent of 437,445 tons K_2O, an increase of 6.0 per cent in salts and 11.3 per cent in K_2O. Agricultural deliveries consisted of 390,771 tons of K_2O as muriate, 11,390 tons K_2O as manure salts, and 35,284 tons K_2O as sulphate of potash and sulphate of potash-magnesia. The chemical industries took 56,118 tons of potash salts containing an equivalent of 35,033 tons K_2O which represents a decrease of 28.0 per cent in salts and 27.7 per cent in K_2O under the first half of 1945.

International Establishes Plant Community Scholarships

To encourage interest in higher education which is regarded as essential to continued progress of all American industry, International Minerals and Chemical Corporation has announced the establishment of several scholarships for residents in two of its most important plant communities, according to Louis Ware, president of the company.

The scholarships, each amounting to $600

POTASH DELIVERIES

Short Tons K_2O

(United States, Canada, Cuba, Hawaii, Puerto Rico)

	January–June		April–June	
	1946	1945	1946	1945
Muriate	390,771	337,474	176,369	160,859
Manure Salts	11,390	26,062	4,260	11,341
Sulphate and Sul. Pot..Mag.	35,284	29,428	18,438	14,019
Total Agricultural	437,445	392,964	199,067	186,219
Chemical	35,033	48,482	18,751	24,007
Grand Total	472,478	441,446	217,818	210,226

POTASH
TRONA
SALTS

AMERICAN POTASH and CHEMICAL CORPORATION
122 East 42nd St. New York City

Pioneer Producers of Muriate in America

Branch Offices
214 Walton Building
ATLANTA 3, GEORGIA
231 South La Salle Street
CHICAGO 4, ILLINOIS
609 South Grand Avenue
LOS ANGELES 14, CALIF.

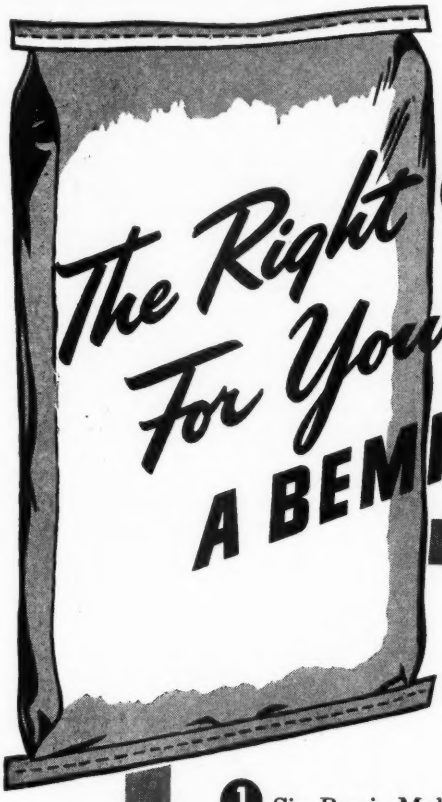
MURIATE and SULPHATE of POTASH

Plant foods are urgently needed to grow the crops which feed our nation and our armed forces.

Our plant at Trona, Calif., is operating at capacity to provide supplies of these essential plant foods, and other materials needed in the national effort.

Manufacturers of Three Elephant Borax and Boric Acid

See page 29



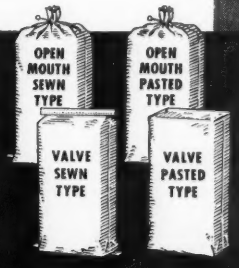
The Right Container For Your Fertilizer A BEMIS MULTIWALL

Bemis Multiwall Paper Shipping Sacks give you an efficient, low-cost container for your fertilizer. Note these quality and service advantages:

1. Six Bemis Multiwall Plants are located at strategic points north, south, east, and west to facilitate delivery.

2. Materials for Bemis Multiwalls are carefully selected and laboratory tested before used in production. Sacks are rigidly inspected throughout all manufacturing processes.

3. Bemis Multiwall Specialists are at your service to help you solve packaging problems. Bemis representatives are located in 32 principal cities.



BEMIS BRO. BAG CO.

Peoria • East Pepperell, Mass. • Mobile, Ala. • San Francisco, Calif. • Wilmington, Calif. • St. Helens, Ore.

OFFICES: Baltimore • Boston • Brooklyn • Buffalo • Charlotte • Chicago Denver • Detroit • Houston • Indianapolis • Kansas City • Los Angeles Louisville • Memphis

Minneapolis • New Orleans • New York City • Norfolk • Oklahoma City • Omaha • Orlando • St. Louis Salina • Salt Lake City • Seattle Wichita

annually towards a complete four-year college course, will be awarded each year to two of the most worthy applicants among the residents of Polk county, Florida, and Eddy country, New Mexico, as determined by local committees of educators, business men, employee representatives, and company officials. The company's principal phosphate mine and refinery is located near Mulberry, Florida, in Polk county, while its big potash mine and refinery is located near Carlsbad, New Mexico, in Eddy county.

Two scholarships will be awarded annually in both counties. The company has stipulated that one be granted either to an employee or the son or daughter of an employee locally employed, and that a second be awarded to the son or daughter of a resident of each county not employed by International.

Eligibility requirements will include superior scholastic performance by the successful applicants while in high school, high character, and evidence of leadership qualities. The scholarships will be made available at any accredited college or university located in Florida and New Mexico respectively selected by the students receiving the awards. The winners will be permitted to select any course of instruction leading to a degree, although top-quarter scholastic standing must be maintained by the students to continue their eligibility throughout the four-year period. The first scholarships will be awarded for the fall term beginning September, 1947.

October Sulphate of Ammonia

Production of by-product sulphate of ammonia showed little change during October, according to U. S. Bureau of Mines figures. The output of 66,663 tons was 4 per cent above that of September. For the first ten months of the year, however, production showed a drop of 18 per cent from the same period of 1945. Sales during October totaled 61,834 tons, while stocks on hand at the end of the month amounted to 45,616 tons.

	Sulphate of Ammonia Tons	Ammonia Liquor Tons (NH_3)
Production		
October, 1946	66,663	2,318
September, 1946	64,074	2,240
October, 1945	49,368	1,996
January-October, 1946	527,352	20,345
January-October, 1945	641,004	23,072
Sales		
October, 1946	61,834	2,392
September, 1946	61,592	1,929
October, 1945	52,849	1,923
January-October, 1946	512,438	19,090
January-October, 1945	686,694	21,510
Stocks on Hand		
October 31, 1946	45,616	685
September 30, 1946	40,953	909
October 31, 1945	22,848	916

Davison Adds New Officers

An expansion of the official organization of The Davison Chemical Corporation to meet the requirements of the Corporation's increasing activities was announced on December 19 following a meeting of the Board of Directors.

The changes, involving promotions of two men now with the Corporation and the bringing on of two new officers, were announced by Chester F. Hockley, President.

Mr. Hockley said expansion of the Corporation's activities since the end of the war and still further expansion planned as a result of Davison's research and development program had made it necessary to enlarge the executive organization of the Corporation.

Marlin G. Geiger, now vice-president of the Westvaco Chlorine Products Company of Charleston, W. Va., will become executive vice-president of Davison, effective January 1. This is a newly created position.

Elmer B. Dunkak, for the past fifteen months in charge of all the Corporation's

"JAY BEE"

FERTILIZER GRINDER

"Jay Bee" grinds every grindable fertilizer ingredient-coarse or fine, cool and uniform.

All steel construction—heavy cast iron base. Practically indestructible. Biggest capacity for H.P. used. Handles products with up to 14% grease—30% moisture. Delivers finished products to storage bins without screens or elevators. Sizes and styles from 20 H.P. to 200 H.P. to meet every grinding requirement.

Write for complete details. Please state your grinding requirements.

J. B. SEDBERRY, INC.

Franklin, Tenn. Utica, N. Y.

AMERICA'S PRODUCTION BOSS

Every year, by new knowledge, methods and more efficient machinery, the American farmer is getting more and more out of his land.

But modern methods still need fertile soil . . . the foundation for successful farming.

Fertilizers, many of them compounded with potash, insure the heaviest dividend possible from every acre. For, potash enriches the soil, assures bigger crops, helps develop resistance to disease and rot.

Sunshine State Potash is one of the prime assets which help to make America one of the world's greatest food producers.

UNITED STATES POTASH COMPANY
Incorporated
30 Rockefeller Plaza, New York 20, N. Y.

HIGRADE
MURIATE OF POTASH
62/63% K_2O

GRANULAR
MURIATE OF POTASH
48/52% K_2O

MANURE SALTS
22/26% K_2O

SUNSHINE STATE POTASH
A PRODUCT OF NEW MEXICO U.S.A.

Reg. U. S. Pat. Off.

engineering activities, is promoted to the office of vice-president; Dr. G. Miller Hebbard is elected a vice-president of Davison in charge of operations, and Dr. Charles E. Waring, technical assistant to Mr. Hockley since 1945, is promoted to the office of vice-president for Research and Development.

A native of Harrisburg, Pa., and a graduate in industrial chemistry from Pennsylvania State College with the degree of B.S., Mr. Geiger has been active in the chemical and allied industries for a quarter of a century.

He joined Westvaco Chlorine Products Company in 1925, becoming assistant manager in 1927 and in 1929 was appointed resident manager of the entire West Virginia operations of the Company. He was elected a director of the Company in 1939 and became vice-president in 1940.

Since 1940, he has served as a director of the United Chemicals Corporation, of which he has been vice-president since 1943. Since 1944, in addition to the above duties, he has been president of the West Virginia Charcoal Company.

Mr. Dunkak, originator of many widely used improvements in process heating and controls, has been with Davison since January, 1944, when Mr. Hockley chose him to organize the newly created Process Division of the Corporation. In September, 1945, his duties were increased to include all of the Corporation's engineering activities.

A native of New York City, Mr. Dunkak is a chemical engineering graduate of Pratt Institute and took graduate work at Brooklyn Polytechnic and at Massachusetts Institute of Technology

Dr. Hebbard, a native of Washington, comes to Davison from the Reconstruction Finance Corporation, Office of Rubber Reserve, with which he has served as deputy director of production, research, and development, with full responsibility for direction of the government's activities in synthetic rubber production and development.

Previously, he had served as technical adviser to the President of the Southern California Gas Company, and had been ten years with the Dow Chemical Company, with which he rose to the rank of executive assistant to the president as a liaison engineer for the engineering and construction of magnesium plants and foundries for the Defense Plant Corporation.

Dr. Hebbard graduated with honors from Lehigh University in 1929 and subsequently took his master's degree in chemistry and his doctor of science degree in chemical engineering at the University of Michigan.

A native of Cincinnati and graduate of Ohio Wesleyan and Ohio State Universities, Dr. Waring did outstanding work during the war as consultant to the Packaging Section of the Office of Chief of Ordnance and to the Air Service Command of the Army Air Forces. He also served as a member of the tropical deterioration committee of the Office of Scientific Research and Development.

Previously, from 1930 to 1945, he had done research work on refrigerants, oil, plastics and corrosion preventive methods for the Frigidaire Division of General Motors Corporation, and from 1927 to 1930 had been with the Eastern Kodak Company Research Laboratory.

Fertilizer For Ohio Hay

Citing the results of 93 tests on Ohio meadows, D. R. Dodd, agronomist of Ohio State University, states that fertilizers applied on meadows frequently pays a higher percentage of profit than when applied on row crops. In the tests, applications of a nitrate fertilizer costing $3.60 per acre, brought an increase in hay yields worth $13.10. He also states that livestock show great preference for fertilized portions of pastures.

IMPROVED TYPE

CONTACT ACID PLANTS

WITH

NEW NON-CLOGGING CONTACT MASS

NICOLAY TITLESTAD CORP.

103 PARK AVE., NEW YORK 17, N. Y.

AMMONIA OXIDATION PHOSPHORIC ACID

A Complete Service

THE strategic factory locations of The American Agricultural Chemical Company, as shown on the accompanying map, assure prompt, dependable service for the complete line of products listed below.

We manufacture all grades of Commercial Fertilizers, Superphosphate, Agrinite Tankage, Bone Black, Bone Black Pigments (Cosmic Black), Bone Ash, Bone Oil, Dicalcium Phosphate, Monocalcium Phosphate, Gelatin, Agricultural Insecticides (including Pyrox, Arsenate of Lead, Calcium Arsenate, etc.), Trisodium and Disodium Phosphate, Phosphorus, Phosphoric Acid, Sulphuric Acid, Ammonium Carbonate, Ammonium Fluosilicate, Magnesium Fluosilicate, Potassium Fluosilicate, Phosphorus Pentasulphide, Phosphorus Sesquisulphide (lump), Zinc Fluosilicate, Salt Cake; and we are importers and/or dealers in Nitrate of Soda, Cyanamid, Potash Salts, Sulphate of Ammonia, Raw Bone Meal, Steamed Bone Meal, Sheep and Goat Manure, Fish and Blood. We mine and sell all grades of Florida Pebble Phosphate Rock.

FACTORIES

Alexandria, Va.
Baltimore, Md.
Buffalo, N. Y.
Carteret, N. J.
Cayce, S. C.
Chambly Canton, Quebec, Can.
Charleston, S. C.
Cincinnati, Ohio
Cleveland, Ohio
Detroit, Mich.
Greensboro, N. C.
Havana, Cuba
Henderson, N. C.
Montgomery, Ala.
Nat. Stockyards, Ill.
Norfolk, Va.
No. Weymouth, Mass.
Pensacola, Fla.
Pierce, Fla.
Port Hope, Ont., Can.
Savannah, Ga.
Searsport, Maine
South Amboy, N. J.
Spartanburg, S. C.
Wilmington, N. C.

The AMERICAN AGRICULTURAL CHEMICAL Co.

50 Church Street, New York 7, N. Y.

SALES OFFICES

Alexandria, Va.
Baltimore, Md.
Buffalo, N. Y.
Carteret, N. J.
Charleston, S. C.
Cincinnati, Ohio
Cleveland, Ohio
Columbia, S. C.
Detroit, Mich.
Greensboro, N. C.
Havana, Cuba
Henderson, N. C.
Houlton, Me.
Laurel, Miss.
Montgomery, Ala.
Montreal, Quebec, Can.
National Stockyards, Ill.
New York, N. Y.
Norfolk, Va.
No. Weymouth, Mass.
Pensacola, Fla.
Pierce, Fla.
Port Hope, Ont., Can.
Savannah, Ga.
Spartanburg, S. C.
Wilmington, N. C.

FERTILIZER ABSTRACTS

Abstracts of papers presented before the Division of Fertilizer Chemistry, American Chemical Society, Chicago, September, 1946

Comparison of Results by the Modified Kjeldahl and Devarda Methods in Absence and Presence of Chlorine

P. McG. Shuey, Shuey & Co., Savannah, Ga.

Various mixtures in which all of the nitrogen was derived from sodium nitrate were very carefully made up in the laboratory, ranging in grade from 2 to 10 per cent. One series contained potassium sulphate as the source of potash, while a corresponding series contained muriate of potash as the potash source.

The analyses show that the presence of chlorides has the tendency to yield low results by the modified Kjeldahl method. This tendency was found to be in proportion to the increase in grade and was greatest when the chlorine was increased.

The Devarda method, on the other hand, is not affected by the presence of chlorine, and it is safer to use this method when organic matter, cyanamid, or urea is absent. Sodium thiosulphate was used in the modified Kjeldahl method.

A Displacement Method for Sampling the Solution Phase of Mixed Fertilizers

L. F. Rader, Jr., Bureau of Plant Industry, Soils, and Agricultural Engineering, Beltsville, Md.

The Burd-Martin method commonly used to displace soil solutions has been adapted for use with mixed fertilizers, superphosphates, and ammoniated superphosphates.

Pyrex-glass tubes 5 x 107 cm. are packed with fertilizer containing a determined amount of "free water" in equilibrium with the solid phases of the sample at 30° C. Displacement of the solution phase is accomplished using 95 per cent ethyl alcohol when mixed fertilizers or ammoniated superphosphates are under test. With superphosphates, however, aqueous phosphoric acid of a concentration equivalent to that required by the "free acid/free water" ratio of the sample is used as the displacement liquid in order to prevent the formation of a new solid phase in the sample. In the case of superphosphates a 1 to 1 mixture with dry quartz-sand is required to accomplish displacement of the solution phase.

The displaced solution phases are tested for alcohol contamination colorimetrically by distilling about 2 ml. into ammonium hexanitrate cerate dissolved in 2 molar nitric acid. Further confirmation that the true solution phase is obtained by the method is had by determining the relative humidity at 30° C. of both the sample under test and the displaced solution phase by means of Dumore electric hygrometer sensing elements.

The composition of the solution phases from two mixed fertilizers (5–10–4 grades) ranging in moisture content from 2 to 10 per cent, one containing only ammonium sulfate as a source of nitrogen, the other containing ammonium sulfate and ammonium nitrate in addition to anhydrous ammonia, are given. Results are also given for ammoniated superphosphates containing 2 and 4 per cent nitrogen, and for superphosphate at periods of 7, 15, 30, 45, and 180 days after acidulation.

The County Laboratory System of Soil Testing in Illinois

Roger H. Bray, University of Illinois, College of Agriculture, Agricultural Experiment Station, Urbana, Ill.

The program of testing soils for available nutrients in Illinois has resulted in the development of a county laboratory system. The laboratory is financed by the farm bureau and is under the direction of the farm adviser (county agent). A farm bureau employee is trained at the university to run tests for acidity, phosphorus, and potassium. The results of the tests are handed over to the farm adviser, who interprets them in terms of the per cent yield increases obtainable for fertilizer use and the amounts of fertilizers needed for maximum production.

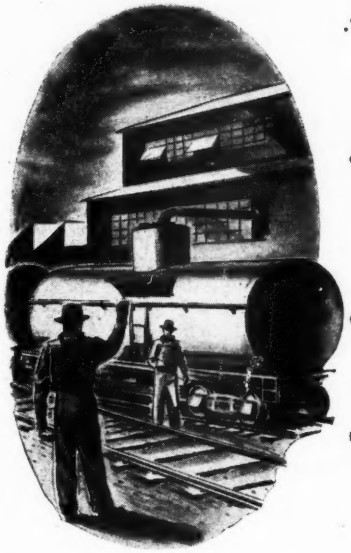
The problems involved in setting up a county or district laboratory are discussed, including training of personnel and controlling the accuracy of the testing. The interpretations of the tests by the farm adviser and the

STEDMAN
FERTILIZER PLANT EQUIPMENT
Dependable for more than 50 Years
All-Steel Self-Contained Fertilizer Mixing Units
Batch Mixers—Dry Batching
Pan Mixers—Wet Mixing
Swing Hammer and Cage Type Tailings Pulverizers
Vibrating Screens
Dust Weigh Hoppers
Acid Weigh Scales
STEDMAN'S FOUNDRY & MACHINE WORKS
AURORA, INDIANA, U.S.A. Founded 1834

New SPENSOL

SPENCER NITROGEN SOLUTIONS

OFFERS ALL THESE EXTRA + BENEFITS IN MIXING HIGHER NITROGEN FERTILIZERS



+ MORE NITROGEN PER DOLLAR

The high nitrogen content of New *Spensol* nitrogen solutions makes *Spensol* your new, economical source for efficient, more profitable mixing. (See chart below.)

+ HIGHER NITROGEN CONTENT

The high nitrogen content of SPENSOL makes possible the manufacture of high nitrogen complete fertilizers, now so much in demand ... without detriment to other fertilizer ingredients in the mix.

+ EASIER MIXING

Spensol is easy to mix and facilitates the preparation of a clean, non-caking fertilizer that cures more quickly.

+ IMMEDIATE AVAILABILITY

Spensol is ready for shipment to you in tank car lots direct from Spencer Chemical Company's Jayhawk Works, centrally-located at Pittsburg, Kansas. Our technical advisory staff is at your service, without charge.

Assure Your SPENSOL 1946-47 Supply—Phone Your Order Today!

COMPOSITION OF SPENSOL (SPENCER NITROGEN SOLUTIONS)

	Ammonium Nitrate %	Anhydrous Ammonia %	Water %	Total Nitrogen %	Nitrate Nitrogen %	Ammonia Nitrogen %
SPENSOL A	65.0	21.7	13.3	40.6	11.36	29.24
SPENSOL B	55.5	26.0	18.5	40.8	9.62	31.18
SPENSOL C	66.8	16.6	16.6	37.0	11.65	25.35

Spencer Chemical COMPANY

FERTILIZER

General and Sales Offices: Dwight Building, Kansas City 6, Missouri
Works: Pittsburg, Kansas
• **Manufacturers of HI-NITROGEN Fertilizer Products.**

scientific basis for these interpretations are discussed, including the limitations of soil testing.

The place of the soil testing program in both the soil fertility build-up program and maintenance program is demonstrated.

The writer's new theory of the relationship between plant nutrient uptake and the mobility of the nutrients in the soil as it limits the application of the Mitscherlick-Baule per cent yield concept is explained, including the reasons why a shortage of nitrogen is experiment field studies makes them useless for measuring and studying other deficiencies.

Influence of Placement on Response of Crops to Calcium Phosphates

C. W. Whittaker, D. G. Coe, R. P. Bartholomew, G. W. Volk, and L. F. Rader, Jr., Division of Soils, Fertilizers, and Irrigation, Bureau of Plant Industry, Soils and Agricultural Engineering, Beltsville, Md.

Greenhouse experiments were conducted on the effect of placement on the response of crops to mono-, di-, and tricalcium phosphates, hydroxylapatite, flourapatite (as phosphate rock), and silicocarnotite, the active phosphate of basic slag. The placements used were two band locations, one in contact with the seed and one located 0.75 inch below the seed and five degrees of mixing of the phosphate with the soil starting from the seed level down. These were with 2.5, 10, 40, 60, or 100 per cent of the soil in the pot. Nitrogen and potash carriers were mixed with all the soil in the pot in adequate amounts. Experiments were conducted with wheat, Sudan grass, and oats on one or more of the soils—Newtonia silt loam, Cecil clay loam, and Sassafras silt loam.

Monocalcium phosphate tended to give higher yields in the band and other more localized placements, as the 2.5 and 10 per cent mixing, than when mixed with more of the soil. With one exception, the Sudan grass crop on Newtonia soil, this phosphate gave yields that equaled or bettered those of the best of the other phosphates in most placements.

Dicalcium phosphate and silicocarnotite both gave much lower yields in the band placements than in any other including the 2.5 per cent mixing. With this exception the yields were as high as those from monocalcium phosphate. Tricalcium phosphate, except in some placements on the Newtonia soil, gave yields intermediate between the three most active phosphates, mono-, and dicalcium phosphate, and silicocarnotite, and the two less active phosphates, hydroxylapatite, and phosphate rock.

Hydroxylapatite gave yields that were usually significantly greater than those from phosphate rock but were always much less than those from the other four phosphates applied at the same P_2P_5 rate. In general the apatite gave better yields in the 2.5 and 10 per cent mixings than in the contact band or 100 per cent mixing. Phosphate rock consistently gave the lowest yields of all the phosphates.

A special experiment indicated that about the same crop responses were obtained when the nitrogen and potash carriers were put in the same placements with the phosphates as when these carriers were mixed with all the soil in the pot.

The Effects of Calcium Fluoride Incorporations Upon Plant Growth, Fluorine and Phosphorus Uptake, and Soil pH.

W. H. MacIntire, S. H. Winterberg, L. B. Clements, and H. W. Dunham, University of Tennessee Agricultural Experiment Station

Fluorspar and precipated CaF_2 were incorporated half-depth at the $CaCO_3$-equivalent rates of 2 and 4 tons per acre surface to determine whether these inputs would supply

Fertilizer Machinery AND Acidulating Equipment

BATCH MIXERS — PULVERIZERS — CAGE MILLS — SCREENS — SCALES
ELEVATORS, AND ALL OTHER EQUIPMENT FOR COMPLETE PLANTS

THE UTILITY WORKS - - EAST POINT, GA.

L. W. HUBER COMPANY
Brokers Fertilizer Materials
Room 903
170 BROADWAY
NEW YORK 7, N.Y.

ALEX. M. McIVER & SON

Specializing
SULPHURIC ACID

Nitrogenous Materials
Blood and Fertilizer Tankage
Phosphate Rock
Bone Meals
Dolomitic Lime
(42—44% Magnesium Carbonate)
Bags
Soya Meal and Cottonseed Meal
SOUTH AMERICAN DRY RENDERED TANKAGE

PEOPLES OFFICE BUILDING
Charleston, S. C.

Keyed SERVICE!

Fertilizer plants all over the country—large and small—state their needs and we meet them. Large stocks of seasoned materials and ample modern production facilities enable us to make prompt shipments.

TRIPLE SUPERPHOSPHATE

46 to 48% Available Phosphoric Acid

•

We also manufacture
HIGH-GRADE SUPERPHOSPHATE

•

U. S. Phosphoric Products
Division
TENNESSEE CORPORATION
Tampa, Florida

New York Office:
61 Broadway
Washington, D. C.
446 The Woodward Bldg.

Sales Agents:
Bradley & Baker
155 East 44th St
New York, N. Y

A Mark of FLORIDA TRIPLE SUPER PHOSPHATE *Reliability*

SPECIFY THREE ELEPHANT BORAX

REG. U.S. PAT. OFF. REG. U.S. PAT. OFF.

. . . . WHEN BORON IS NEEDED TO CORRECT A DEFICIENCY OF THIS IMPORTANT SECONDARY ELEMENT

Agricultural authorities have shown that a lack of Boron in the soil can result in deficiency diseases which seriously impair the yield and quality of crops.

When Boron deficiencies are found, follow the recommendations of local County Agents or State Experiment Stations.

Information and references available on request.

AMERICAN POTASH & CHEMICAL CORPORATION
122 East 42nd ST., NEW YORK CITY
Pioneer Producers of Muriate of Potash in America

See Page 30

calcium adequately to a succession of plants and upon the assumption that such inputs would serve to indicate any plant and soil effects that could be attributed to those smaller quantities of fluorides introduced through use of phosphatic fertilizers. There were no observable effects that could be attributed to fluoride toxicity upon either germination or plant growth. Incorporated alone, the fluorics could not be depended upon as sources of adequate calcium nutrition; they induced virtually no effect upon growth of either Sudan grass, rye grass, or alfalfa, in succession; they increased greatly the fluorine concentration in Sudan grass and still more so in the rye grass, and they raised soil pH, significantly, although not extensively. The addition of CaF_2 decreased the response shown by the nonlegumes to the superphosphate. Alfalfa response to the fluoride + phosphate + limestone exceeded that from phosphate + limestone, without accompanying increase of fluorine in the crop. The fluorine content of alfalfa tops was much lower than that found in roots collected from a zone devoid of additive fluoride.

BUILDING THE CHAIN OF GOOD WILL

(Continued from page 9)

Also, an occasional letter to the editor will help to promote friendly relations. This might provide information for a news story, or be of a personal character not for publication. It could comment approvingly on an interesting article, editorial, or new department in the paper; or it might be simply a note covering a new pamphlet about the industry which you want to call to the editor's attention; or even a congratulation on the paper's anniversary or the editor's birthday. If some new equipment is installed or the factory is otherwise improved, a personal note might be sent to the editor, inviting him to come around and inspect the improvement.

All of these contacts are informal, designed to create friendly relations with editors and writers, and give them a better understanding of the problems of the industry and of what the factory contributes to the community; in other words, background knowledge which is necessary to understand our business.

Formal publicity statements are of course made by means of press releases, interviews, photographs, special articles, and advertisements.

When a proper occasion arises, a news release might be sent to the local press. The aim is not to "grab free space" but to inform the press of news of natural interest to its readers. Such news might be about your own employes such as a promotion or an unusual accomplishment, new equipment, new uses for plant food, general review of the year's operations, announcement of demonstrations arranged by the factory, awards of prizes to schools and young people's clubs, etc.

Whenever information about our industry is published in the local press, it whould be carefully read. Inaccurate statements should be called to the attention of the editor, but not in a complaining manner, because the chances are the error was unintentional; the purpose is merely to set the record straight for the editor and his staff. If the mistake is of sufficient importance the editor might be asked to print a correction but "corrections" rarely are satisfactory from the reader's standpoint and only result in dissatisfaction on the part of the editor.

Relations with the press must be handled carefully. It is better to understate than to overstate. It is better to say too little than much. But while observing these cautions, it must be remembered that the press is one of the most valuable media for building up good will for our business with the general public. Consequently, no legitimate opportunity should be overlooked to give the press timely, factual information of public interest. Even if an occasional inaccuracy should creep in—and it is almost impossible for a newspaper, in the rush of deadlines, to avoid this—such occasional minior inaccuracies will be far outweighed by the positive value of the published information we provide.

These, then, are the four links in the chain of good will: employes, buyers and sellers of our product, agricultural leaders, and the press. For a good job of getting credit for good conduct, each link should be well forged.

SACKETT EQUIPMENT
for the Fertilizer Plant
BATCH MIXERS • PULVERIZERS
SCREENS • BUCKET ELEVATORS
CONTINUOUS AMMONIATING EQUIPMENT
BASING, MIXING & BAGGING UNITS
COMPLETE FERTILIZER PLANTS
THE A.J. SACKETT & SONS CO.
1701 S. HIGHLAND AVE., BALTIMORE, MD.

BUYERS' GUIDE • A CLASSIFIED INDEX TO ALL THE ADVERTISERS IN "THE AMERICAN FERTILIZER"

AMMONIA—Anhydrous and Liquor
DuPont de Nemours & Co., E. I., Wilmington, Del.
Hydrocarbon Products Co., New York City.
Spencer Chemical Co., Kansas City, Mo.

AMMONIUM NITRATE
Spencer Chemical Co., Kansas City, Mo.

BAG MANUFACTURERS—Burlap
Bemis Bro. Bag Co., St. Louis, Mo.
Chase Bag Co., Chicago, Ill.
Fulton Bag & Cotton Mills, Atlanta, Ga.
Mente & Co., Inc., New Orleans, La.
Virginia-Carolina Chemical Corp., Richmond, Va.

BAG MANUFACTURERS—Cotton
Bemis Bro. Bag Co., St. Louis, Mo.
Chase Bag Co., Chicago, Ill.
Fulton Bag & Cotton Mills, Atlanta, Ga.
Mente & Co., Inc., New Orleans, La.
Virginia-Carolina Chemical Corp., Richmond, Va.

BAG MANUFACTURERS—Paper
Bemis Bro. Bag Co., St. Louis, Mo.
Chase Bag Co., Chicago, Ill.
Fulton Bag & Cotton Mills, Atlanta, Ga.
Hammond Bag & Paper Co., Welisburg, W. Va.
Jaite Company, The, Jaite, Ohio
Raymond Bag Co., Middletown, Ohio.
St. Regis Paper Co., New York City.

BAGS—Dealers and Brokers
Ashcraft-Wilkinson Co., Atlanta, Ga.
Huber & Company, New York City.
McIver & Son, Alex. M., Charleston, S. C.

BAG CLOSING MACHINES
St. Regis Paper Co., New York City.
Union Special Machine Co., Chicago, Ill.

BAG PRINTING MACHINES
Schmutz Mfg. Co., Louisville, Ky.

BAGGING MACHINES—For Filling Sacks
Exact Weight Scale Co., Columbus, Ohio
St. Regis Paper Co., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.
Utility Works, The, East Point, Ga.

BONE BLACK
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Huber & Company, New York City.

BONE PRODUCTS
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

BORAX AND BORIC ACID
American Potash and Chem. Corp., New York City.

BROKERS
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
Keim, Samuel D., Philadelphia, Pa.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

BUCKETS—For Hoists, Cranes, etc.
Hayward Company, The, New York City.

BUCKETS—Elevator
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CARS AND CARTS
Hough Co., The Frank G., Libertyville, Ill.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

CHEMICALS
American Agricultural Chemical Co., New York City
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
Virginia-Carolina Chemical Corp., Richmond, Va.

CHEMISTS AND ASSAYERS
Gascoyne & Co., Baltimore, Md.
Shuey & Company, Inc., Savannah, Ga.
Wiley & Company, Baltimore, Md.

CONDITIONERS
American Limestone Co., Knoxville, Tenn.
Keim, Samuel D., Philadelphia, Pa.

COTTONSEED PRODUCTS
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

CYANAMID
American Agricultural Chemical Co., New York City.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Scar-Lipman & Co., Inc., New York City.

DRYERS
Sackett & Sons Co., The A. J., Baltimore, Md.

ENGINEERS—Chemical and Industrial
Chemical Construction Corp., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Titlestad Corporation, Nicolay, New York City.

FERTILIZER (Mixed) MANUFACTURERS
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
International Minerals and Chemical Corporation, Chicago, Ill.
Virginia-Carolina Chemical Corp., Richmond, Va.

FISH SCRAP AND OIL
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City
Huber & Company, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.

FOUNDERS AND MACHINISTS
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

A Classified Index to Advertisers in "The American Fertilizer"

BUYERS' GUIDE

For an Alphabetical List of all the Advertisers, see page 33

HOPPERS
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

IMPORTERS, EXPORTERS
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga
Baker & Bro., H. J., New York City
Bradley & Baker, New York City.
Scar-Lipman & Co., Inc., New York City.

INSECTICIDES
American Agricultural Chemical Co., New York City.
McLaughlin GormleyKing Co., Minneapolis, Minn.

LIMESTONE
American Agricultural Chemical Co., New York City.
American Limestone Co., Knoxville, Tenn.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Bradley & Baker, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Scar.Lipman & Co., Inc., New York City.

LOADERS—Car and Wagon
Hough Co., The Frank G., Libertyville, Ill.
Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Acid Making and Handling
Chemical Construction Corp., New York City.
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MACHINERY—Ammoniating
Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Elevating and Conveying
Hough Co., The Frank G., Libertyville, Ill.
Hayward Company, The, New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MACHINERY—Grinding and Pulverizing
Bradley Pulverizer Co., Allentown, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.
Sedberry, Inc. J. B., Franklin, Tenn. and Utica, N. Y.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MACHINERY—Material Handling
Hayward Company, The, New York City.
Hough Co., The Frank G., Libertyville, Ill.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind
Utility Works, The, East Point, Ga.

MACHINERY—Mixing, Screening and Bagging
Exact Weight Scale Co., Columbus, Ohio
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind
Utility Works, The, East Point, Ga.

MACHINERY—Power Transmission
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind

MACHINERY—Superphosphate Manufacturing
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MANGANESE SULPHATE
McIver & Son, Alex. M., Charleston, S. C.
Tennessee Corporation, Atlanta, Ga.

MIXERS
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind
Utility Works, The, East Point, Ga.

NITRATE OF SODA
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City
Bradley & Baker, New York City.

NITRATE OF SODA—Continued
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill
McIver & Son, Alex. M., Charleston, S. C
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

NITROGENOUS ORGANIC MATERIAL
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
DuPont de Nemours & Co., Wilmington, Del.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.

NOZZLES—Spray
Monarch Mfg. Works, Philadelphia, Pa.

PHOSPHATE ROCK
American Agricultural Chemical Co. New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City
International Minerals & Chemical Corporation, Chicago, Ill
McIver & Son, Alex. M., Charleston, S. C.
Ruhm, H. D., Mount Pleasant, Tenn.
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.
Virginia-Carolina Chemical Corp., Richmond, Vc.

PLANT CONSTRUCTION—Fertilizer and Acid
Chemical Construction Corp., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind
Titlestad Corporation, Nicolay, New York City.
Utility Works, The, East Point, Ga.

POTASH SALTS—Dealers and Brokers
American Agricultural Chemical Co., New York City
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

POTASH SALTS—Manufacturers
American Potash and Chem. Corp., New York City
Potash Co. of America, New York City.
International Minerals & Chemical Corp., Chicago, Ill
United States Potash Co., New York City.

PRINTING PRESSES—Bag
Schmutz Mfg. Co., Louisville, Ky.

PYRITES—Brokers
Ashcraft-Wilkinson Co., Atlanta, Ga.

REPAIR PARTS AND CASTINGS
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind
Utility Works, The, East Point, Ga.

ROUGH AMMONIATES
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
McIver & Son, Alex. M., Charleston, S. C
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

SCALES—Including Automatic Bagging
Exact Weight Scale Co., Columbus, Ohio
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind
Utility Works, The, East Point, Ga.

BUYERS' GUIDE

SCREENS
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

SEPARATORS—Air
Sackett & Sons Co., The A. J., Baltimore, Md.

SPRAYS—Acid Chambers
Monarch Mfg. Works, Inc., Philadelphia, Pa.

SULPHATE OF AMMONIA
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
Hydrocarbon Products Co., New York City.
McIver & Son, Alex. M., Charleston, S. C
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

SULPHUR
Ashcraft-Wilkinson Co., Atlanta, Ga.
Texas Gulf Sulphur Co., New York City.

SULPHURIC ACID
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.
Virginia-Carolina Chemical Corp., Richmond, Va.

SUPERPHOSPHATE
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Davison Chemical Corporation, Baltimore, Md.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.
Virginia-Carolina Chemical Corp., Richmond, Va.

SUPERPHOSPHATE—Concentrated
Armour Fertilizer Works, Atlanta, Ga.
International Minerals & Chemical Corporation, Chicago, Ill.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.
Virginia-Carolina Chemical Corp., Richmond, Va.

TANKAGE
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

UREA
DuPont de Nemours & Co., E. I., Wilmington, Del.

UREA-AMMONIA LIQUOR
DuPont de Nemours & Co., E. I., Wilmington, Del.

VALVES
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Utility Works, The, East Point, Ga.

Alphabetical List of Advertisers

American Agricultural Chemical Co., New York City.....25
American Limestone Co., Knoxville, Tenn.....34
American Potash and Chemical Corp., New York City.....20, 29
Armour Fertilizer Works, Atlanta, Ga.....—
Ashcraft-Wilkinson Co., Atlanta, Ga.....Front Cover
Baker & Bro., H. J., New York City.....—
Bemis Bro. Bag Co., St. Louis, Mo.....21
Bradley Pulverizer Co., Allentown, Pa.....—
Bradley & Baker, New York City.....14
Chase Bag Co., Chicago, Ill.....—
Chemical Construction Corp., New York City.....—
Du Pont de Nemours & Co., E. I., Wilmington, Del.—
Exact Weight Scale Co., Columbus, Ohio.....—
Fulton Bag & Cotton Mills, Atlanta, Ga.....6
Gascoyne & Co., Inc., Baltimore, Md.....34
Hammond Bag & Paper Co., Wellsburg, W. Va.....—
Hayward Company, The, New York City.....34
Hough Co., The Frank G., Libertyville, Ill.....16
Huber Co., L. W., New York City.....28
Hydrocarbon Products Co., New York City.....17
International Minerals & Chemical Corporation, Chicago, Ill.....3
Jaite Company, The, Jaite, Ohio.....2nd Cover
Keim, Samuel D., Philadelphia, Pa.....33
McIver & Son, Alex. M., Charleston, S. C.....29
Mente & Co., Inc., New Orleans, La.....4
Monarch Mfg. Works, Inc., Philadelphia, Pa.....34
Potash Co. of America, New York City....3rd Cover
Raymond Bag Co., Middletown, Ohio.....—
Ruhm, H. D., Columbia, Tenn.....34
Sackett & Sons Co., The A. J., Baltimore, Md.....30
Scar-Lipman & Co., Inc., New York City.....—
Schmaltz, Jos. H., Chicago, Ill.....34
Schmutz Mfg. Co., Louisville, Ky.....5
Sedberry, Inc., J. B., Franklin, Tenn. and Utica N. Y...22
Shuey & Company, Inc., Savannah, Ga.....34
Spencer Chemical Co., Kansas City, Mo.....27
Stedman's Foundry and Machine Works, Aurora, Ind.....26
St. Regis Paper Co., New York City.....18, 19
Tennessee Corporation, Atlanta Ga.....—
Texas Gulf Sulphur Co., New York City.....—
Titlestad Corporation, Nicolay, New York City.....24
Union Special Machine Co., Chicago, Ill...Back Cover
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.....29
United States Potash Co., New York City.....23
Utility Works, The, East Point, Ga.....28
Virginia-Carolina Chemical Corp., Richmond, Va.....—
Wiley & Company, Inc., Baltimore, Md.....34

FEEDING AND FERTILIZER MATERIALS

(SINCE 1898)

SAMUEL D. KEIM
1343 ARCH STREET
PHILADELPHIA 7, PA.

MONARCH SPRAYS

This is our Fig. 645 Nozzle. Used for Scrubbing Acid Phosphate Gases. Made for "full" or "hollow" cone in Brass and "Everdur." We also make "Non-Clog" Nozzles in Brass and Steel, and

Stoneware Chamber Sprays

now used by nearly all chamber spray sulphuric acid plants.

CATALOG 6-C

MONARCH MFG. WORKS, INC.
Westmoreland and Emery Sts., Philadelphia, Pa.

HAYWARD BUCKETS

Use this Hayward Class "K" Clam Shell for severe superphosphate digging and handling.

THE HAYWARD CO., 202 Fulton St., New York

GASCOYNE & CO., INC.

Established 1887

Chemists and Assayers

Public Weighers and Samplers

27 South Gay Street - BALTIMORE, MD.

SHUEY & COMPANY, Inc.

Specialty: Analysis of Fertilizer Materials and Phosphate Rock. Official Chemists for Florida Hard Rock Phosphate Export Association. Official Weigher and Sampler for the National Cottonseed Products Association at Savannah; also Official Chemists for National Cottonseed Products Association

115 E. BAYSTREET, SAVANNAH, GA.

H. D. RUHM

Phosphate Consultant

305 W. 7th Street

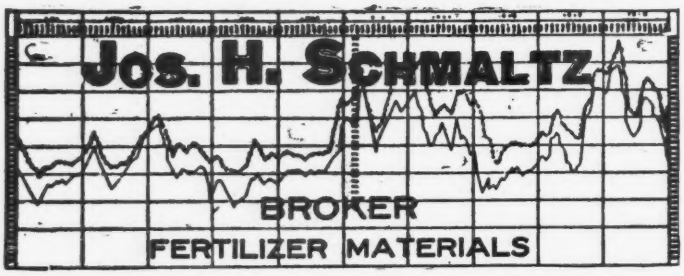
COLUMBIA TENNESSEE

WILEY & COMPANY, Inc.

Analytical and Consulting Chemists

BALTIMORE 2, MD.

Tankage
Blood
Bone
All
Ammoniates



327
South
La Salle
Street
CHICAGO

PULVERIZED
MASCOT
LIMESTONE

Trade Mark Registered

MAGNESIUM LIMESTONE

"It's a Dolomite"

American Limestone Company

Knoxville, Tenn.

PCA's RED INDIAN

makes heap big hustle

The farmer is aware of the potash need of his soil, as never before.

That speaks well for the future of your business and ours though it creates its immediate problems.

To meet these problems PCA is making "heap big hustle" in every possible way. We'd like to ship you every ton of high grade Muriate you'd like to have, but you know the complications as well as we do. Please be assured, however, that this company is doing its utmost to render the best possible service to you today...*that is always PCA's objective.*

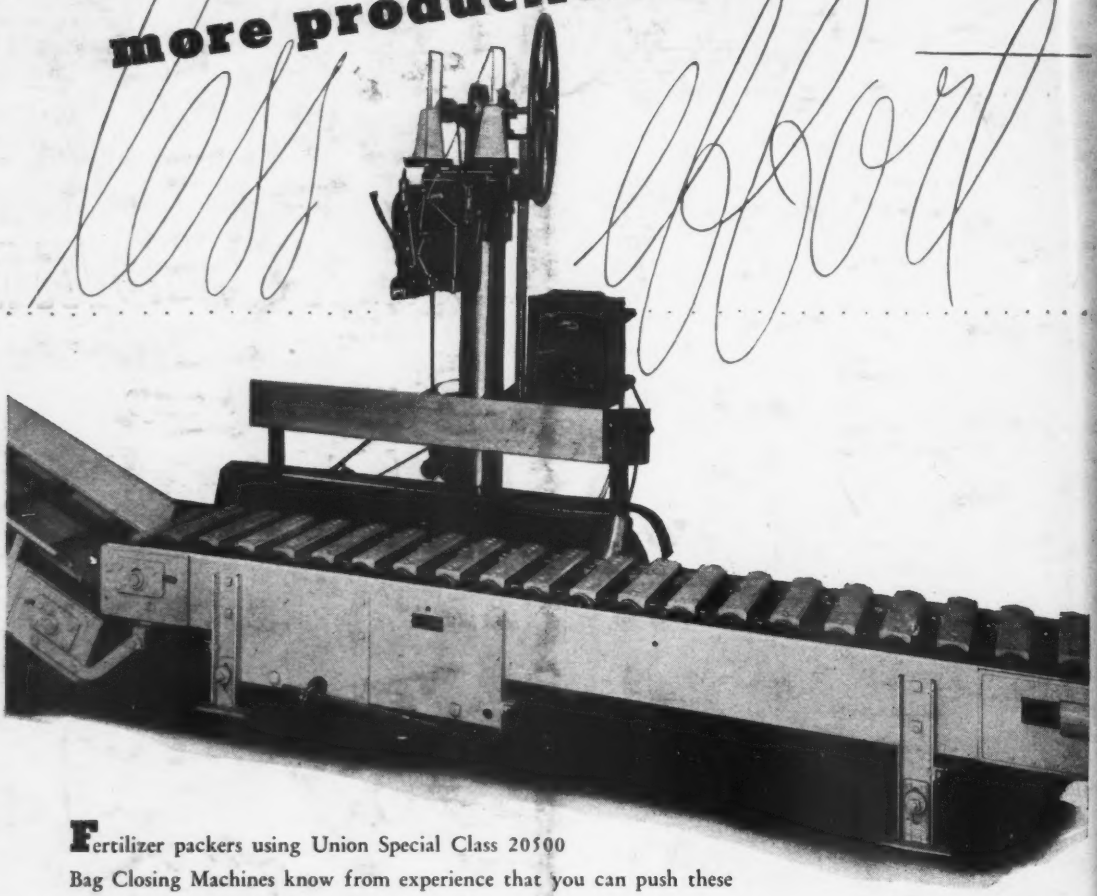
P.C.A.
"The SALT of the EARTH"
RED MURIATE

POTASH COMPANY OF AMERICA

CARLSBAD, NEW MEXICO

GENERAL SALES OFFICE . 50 Broadway, New York, N. Y. • MIDWESTERN SALES OFFICE . . First National Bank Bldg., Peoria, Ill.
SOUTHERN SALES OFFICE . . Candler Building Atlanta, Ga.

more production with . . .



Fertilizer packers using Union Special Class 20500 Bag Closing Machines know from experience that you can push these heavy duty units to high rates of production day after day with minimum maintenance requirements and complete assurance of a good packaging job at all times. This machine is specially engineered to meet the requirements of fertilizer plants where 100 lb., or larger, filled cotton, jute, or paper bags are used. For complete information, ask for a copy of Bulletin No. 200.

UNION SPECIAL MACHINE CO., 496 N. Franklin St., Chicago 10, Ill.

Union Special

Bag Closing Machines